Hoemoptysis

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Remarks on Hæmoptysis.

Of the various diseases to which man is liable, none have excited a greater interest in medical practitioners, or proved more generally fatal to their subjects, than affections of the pulmonary system.

Computations have been made of the number of persons who annually fall victims to these maladies. In the British islands more than one fifteenth of the whole population, is year after year, swept away by the desolating scourge of consumption. In our own country also, a vast proportion of the mortality thus obtains in open defiance of medical arrestation. Nor is it less true, that it is too generally in youth, and under the fairest prospects of long and useful and happy life, that this disease marks its objects, begins its fatal work, saps the foundation of the constitution, and advancing with silence has secured its fortress, from whence it can

never be removed. Whether it proceed by rapid or tardy steps, the certainty of its issue is generally contemporaneous with that of its discrimination.

If it be true that Phthisis pulmonalis in its decisive character with inveterate symptoms, is incurable, medical scrutiny must be chiefly important in efforts to ascertain its various causes, those diseases which are its usual precursors; the employments, habits of life, or constitutional peculiarities, which predispose to it, or prepare its way, and those almost latent symptoms, which from their slightness, and indecisive character are liable to pass unnoticed, but which by early attention, may be prevented from increase and a fatal termination.

Among the causes mediate or immediate of pulmonary consumption, Haemoptysis is by no means uncommon, and to the consideration of this disease, the pages of the following dissertation will be devoted.

The term haemoptysis is taken beyond its radical sense to signify a discharge of blood from the lungs, brought up by coughing mostly, and is generally preceded by some affection of the breast.

This disease occurs frequently in the night. The patient is awaked by a tickling and irritation in the throat. There is sometimes a perception of saltness to his taste. Presently he begins to cough, and expectorates a fluid, which by its warmth and taste he discovers to be blood. The flow of blood continues for sometime; and after the loss of from one to twelve ounces or more, at length stops, either of its own accord, or by the use of the necessary means, and does not recur again, until an unwary exertion, or inconscious motion of the body again excites it. Yet it sometimes returns without any cause assignable by the patient. The hemorrhage may continue to return in this manner for a longer or shorter time, and at length destroy the patient, either

by absolute loss of blood, or by inducing a fatal phthisis. The former of these terminations of hæmoptysis however is very uncommon, though it occasionally happens; when it produces death, it is most generally by the latter course.

Its occurring in the night is to be accounted for from the position of the patient. Lying in a horizontal posture, the lungs receive a large quantity of blood, and the capacity of the thorax being diminished by the contents of the abdomen pressing upon the diaphragm, a congestion takes place, which is relieved by the rupture of one of the delicate vessels of the lungs.

The symptoms, the causes, and mode of treatment are the divided heads of this thesis.

I. Hæmoptysis, except when from violence, is preceded by languor, heaviness, and flushings of heat, or by chills, and coldness of the extremities.

Pain, a sense of fulness in the breast, and difficulty of breathing sometimes give warning of its approach. If the pulse be examined at this time, it is found in some cases to be full and strong, and often jerking under the fingers; in others, it is quick, tense and frequent. After these symptoms have continued for some time, or as is sometimes the case have not even existed, some irritation is felt, though it be not always an object of discrimination, in the larynx. This excites hawking or coughing, and blood is discharged, very often in small quantities, at the first; yet sometimes it is so profuse both by the mouth and nostrils, that the patient may be thought in danger of suffocation.

The blood is florid in most cases. Should it however even be black and thick, if it is brought up by coughing alone, it still has proceeded from the lungs, and has assumed its appearance by having remained in the thorax, for a considerable

time.

Particularly to notice the color of the blood, and the manner in which it is brought up, is important; because these constitute the chief diagnostic marks of the disease. In hæmatemesis, the blood is dark, grumous, mixed with the other contents of the stomach, and brought up by vomiting. There is also a sense of weight and oppression, pain and anxiety referred to that viscus.

But blood can issue from other sources, besides the lungs and stomach, as the fauces and nose. In such case there are no febrile symptoms, nor cough, except when they are the proximate causes; and very often, the practitioner in examining the mouth and fauces, will be able to detect the bleeding orifice.

If in hæmoptysis the quantity be profuse, the discharges frequent, or the continuance long, the system must begin to sink, and the consequent

marks of debility make their appearance. The pulse will become weak, frequent and small, the countenance pallid, respiration more and more difficult, till at length tremors, faintings and convulsions close the scene.

This disease is neither generally nor necessarily fatal, and by some is not even esteemed dangerous, unless the person be disposed to phthisis, or has an unfavorable conformation of the thorax. Yet if a young person is attacked with hæmoptysis not proceeding from external violence, it will, though not fatal in the first instance, probably continue to harass him with repeated attacks till at length the exercation of the system shall open to death some other post. Yet if it may have proceeded from the delicacy of the internal membrane of the lungs, age will sometimes accomplish a cure.

With respect to the source from whence the blood comes and the manner in which it is discharge-

yed, there is some difference of opinion. Three different methods of explanation have been proposed. The rupture of some of the vessels of the lungs, — the anastomosis or morbid dilatation of the mouth of an exhaling vessel — and the erosion of the vessels.— Neither hypothesis has hitherto derived evidence of probability to an extent which would justify the rejection of the others; and each appearing possible, prudence interdicts an exclusion, and counsels rather to allow that hemorrhage may, under different circumstances, take place in all the supposed ways.

When the flow of blood comes on suddenly, is profuse, and preceded by violent exertion or impact, in a person young, and especially if of a plethoric habit, it may be fairly presumed the result of a rupture

When it happens to persons of lax fibre, a small chest, at rest or in bed, without any exertion or apparent exciting cause, and is not profuse, it may with some propriety be ascribed to the "morbid opening,

"of the mouth of an exhaling vessel, so as to allow
"the passage of red blood."

But when hæmoptysis occurs in the latter stages of ulceration or consumption of the lungs, it then proceeds from an erosion of the vessels, by the spreading and extension of the ulcers.

This disease attacks most frequently between the ages of fifteen and thirty, and those chiefly of sanguineous and plethoric habits; of narrow constructed chest and prominent shoulders. As similarity of frame may be hereditary, and the same causes produce the same effects, this malady may be consequently inherited. Various causes may originate this disease at any season, but some always return with the spring months, which render it then most to be expected. Venesection is a common precaution, and prudent preventive, in the commencement of warm weather, and ought to be had recourse to by persons of full habits, and especially by those who have been at any time subjected to this disease.

Of the causes of haemoptysis

The remote or predisposing causes of this disease are: a narrow and depressed thorax, with elevated shoulders, a plethoric habit, and sanguineous temperament; a delicate and slender frame, a sedentary occupation, voracity ebriety &c. A debility which is neither constitutional nor culpable may certainly also be esteemed a cause predisposing to this disease. Many of the subjects of this disease are valetudinarians, whose constitutions have been enervated by disease, exposure, defect of sustenance, confinement, or sorrow. In such circumstances, the disease makes its attack at the moment of greatest exhaustion or prostration of strength, and often when the lungs are least active, and the patient in a state of sleep, wholly quiescent.

The suppression of natural evacuations, as of the hemorrhoidal flux; or of morbific, as of eruptions; a rapid growth of body, excessive exertions of voice, inactivity, indissoluble infarctions of the lungs, sudden expos-

ures to heat or cold, violent agitation, excessive fatigue, watching, and a febrile temperament are all causes more remote or proximate of this disease.

Running, jumping, wrestling, lifting heavy weights, stimulating passions, irregular living except in eating or drinking, and tightness of clothes should be cautiously avoided by those, who have reason to apprehend danger from hæmoptysis.

The frequent occurrence of the disease, in the spring of the year, when the weather first becomes suddenly warm, discovers that an increase of temperature is the most prevalent exciting cause. Heat being a stimulant, exciting the vascular system; and at the same time the external surface not being relaxed; the internal organs become filled with blood, and the circulation increased, the vessels of the lungs which are large and unsupported by any counteracting power, and more delicate in their structure, than the arteries of other parts of the body are unable to sustain the augmen-

ted impetus, and are ruptured.

Dr. Cullen supposes "heat rarefies the fluids more "than it relaxes the solids, which had been before "contracted by the cold of winter," and for that reason hemorrhages occur in the Spring.

Cold, though an opposite cause, by constricting the external surface of the body, has often mechanically produced this disease, and the cold bath or cold sheets are often followed by immediate hæmoptysis.

Those causes which act upon the lungs themselves are various. Loud or long speaking or singing, sudden bursts of laughter, coughing, catarrhs, inflammation and abscess of the lungs, breathing an atmosphere too much attenuated by elevation or rarefaction have produced hemorrhages from the lungs.

"A sudden diminution of the weight of the "atmosphere, especially when concurring with "any effort in bodily exercise", has been assigned by

Dr Cullen as another exciting cause of hæmoptysis. Excessive labour in climbing mountains might put the strongest lungs to a test sufficiently severe; but the difference of weight of atmosphere in ascending the highest mountains has not been proved by facts to have produced this disease. And Cavallo in his Elements of natural philosophy, remarks that aeronauts "seldom ~~seldom~~ speak of having felt any uneasiness with respect to respiration, or other animal function"; yet some of them have ascended to the height of sixteen thousand feet.

III. Of the treatment of hemoptysis

Here Venesection is undoubtedly the first remedy in importance, and to which there should be the first resort. The practitioner should not be deterred by the fear of excessive exhaustion, and suppose that by drawing blood from the arm, at the same time that the effusion is go-

ing on from the lungs, he may reduce indiscreetly his patient; and conspire with the disease which he aims to counteract, by enhancing the calamitous defect of a fluid, essential to the life which he wishes to prolong.

This remedy is effectual in arresting the hemorrhage, not merely by diminishing the excess of quantity, but by changing the determination of blood to the lungs, and establishing another channel, the flux of which is so under our controul, as to be stopped at our pleasure. A prompt and copious bleeding by its powerful sedative effect upon the system, even to syncope in some instances, may at the same time stay the hemorrhage, and afford to the bleeding vessel an opportunity to contract by its own elasticity, and by the removal of that distending impetus which might prolong the disease or render it fatal.

But there is an advantage possibly consequent upon venesection, of the highest consideration. In

this disease, if the wound do not close by the first intention, great danger exists of inflammation, and suppuration, and eventually ulceration and consumption. To prevent such results, the use of the lancet appears indispensible, and the primary barrier against the effects of that phlogistic diathesis, which, when it prevails in the system, is liable to produce the most serious consequences

To be effectual, not less than twelve or sixteen ounces of blood, must be taken from an adult, and the bleeding repeated if necessary. A large orifice is advisable, except where the remedy is merely preventive, or debility great. Dr Smith president of Princeton College, in an attack of hæmoptysis was bled to the amount of one hundred and ninety two ounces, in ten days; and completely recovered.

There are cases however, in which venesection must be cautiously used, deferred or even omitted; but the debility must be extreme, or the loss

of blood in excessive quantity, to justify a dispensing with so important a remedy. The state of the pulse will be a better criterion than the visible external marks of prostration of strength. But if the pulse has become very weak and fluttering, recourse should be had to other means of arresting the hemorrhage or preventing its return.

The chloride of sodium or common salt stands first in order of other remedies, both on account of its great utility, and its being always at hand. For the introduction of this important remedy, the profession is indebted to Dr. Rush; who acknowledges he received it from an old woman. His mode of administering it was to give a tablespoonful of fine salt in the commencement of the hemorrhage, and repeat it if necessary. If its action depends as he supposes it does upon the stimulus it imparts to the throat, and which is thence extended to the lungs, giving tone to the bleeding vessel, and

checking the effusion of the blood, it would certainly be a preferable mode of exhibiting it, to place a lump of salt upon the tongue, and allow it as it dissolves gradually to pass down the fauces, and throat, by which method its full effect would be produced. A tablespoonful is often more than a stomach can bear, and a less quantity has been frequently taken, mixed with a little molasses to equal advantage.

Salt is equally effectual in hæmoptysis in old or young persons, of an active or passive kind.

Cold applied to the body has been thought to have been of great utility, and as never to be omitted. It has been applied to the whole, and to parts of the body. Cloths wet with cold water or vinegar and water, and placed upon the thorax, or in the arm pits have been supposed of essential service.

Dr Bond was once cured of a violent hæmoptoe by wrapping his naked body in a sheet

wrung out of vinegar and water. Yet it is incontrovertible that the cold bath, and even the shock of a cold bed in winter, have in many instances produced the disease. Dr Darwin supposed the hemorrhage might be arrested by a sudden immersion of the body in a cold bath, or by sprinkling cold water copiously upon it. But such practice is certainly hazardous, and ought never to be had recourse to, till every thing else has failed, and death is almost inevitable. Such a powerful constriction of the surface of the body, and sudden shock given to the system, must have the effect of driving the blood from the external to the internal parts, and instead of diminishing, increase the discharge. For a person of a plethoric habit, hemorrhagic diathesis, and in a state of excited action, to be subjected to the shock of the cold bath, must be a dangerous experiment at any time, but is much more to be dreaded, where the person is

already afflicted with a ruptured bloodvessel in a vital and inaccessible part of the body. The disease itself has been produced by such imprudence, in persons who never before had been subjected to it.

It would perhaps be less hazardous to administer cold water internally. A patient has in this disease been ordered to drink water reduced to a low temperature by means of ice, and the result was successful. A young man after other remedies had failed was directed to drink water, reduced to a low temperature by means of ice, in the amount of a cup full every fifteen minutes. In a few hours the bloodspitting ceased, the fever and cough abated, and in a few days he recovered. # This experiment nevertheless could be justified only by the failure of other remedies. In most cases it will be sufficient to place the patient in a cool room, and

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diminish the quantity of his clothes, so that he may be comfortably cool, whilst his extremities shall posses a proper temperature.

Emetics were recommended by Brian Robinson as useful in arresting the bleeding; and Cullen used them in some cases with advantage, but does not recommend them. They may in hemorrhages from other parts do good, but in those from the lungs, the risk run from the efforts made in vomiting more than counterballance all the benefit to be expected from their exhibition. Such medicines given in nauseating doses may be serviceable, and at the same time safe. Dr Barton prefered a combination of opium and ipecachuanha. The nausea and languor induced by this compound must be favorable in cases of violent hemorrhage, and especially if attended with much coughing.

Small doses of laudanum followed by so much supertartrite of potash, as shall keep the body open are generally and properly advised.

Vegetable and mineral astringents are peculiarly adapted to the cure of this disease. The first are less frequently resorted to, the latter have become a general prescription. Of these the alum, the acetate of lead, the sulphates of zinc and copper are among the most valuable. The two first are most generally used in hemorrhages of every description. Alum is to be given in the quantity of eight or ten grains, and increased to much larger doses. But the sugar of lead is undoubtedly to be preferred in most cases of hæmoptysis. Dr. Reynolds used it and esteemed it highly. Dr Barton gave it in doses of six grains every two hours, and it produced no inconvenience. Its use should always be preceded by copious venesection. After the energy of the circulation has been reduced, the lead may be given in doses of three grains every hour, combined with a quarter of a grain of opium.

The bowels are to be kept open by cooling purgatives; the supertartrite of potash or sulphate

of soda may be used for this purpose, yet the quiet of the patient should be carefully preserved.

Cups applied to the breast are of service and help to prevent a consequent inflammation.

Blisters are also among our resources in the management of this disease. The rule laid down by the Professor of the practice and institutes of medicine, with regard to the period of their application, at the same time that it gives support to the importance of venesection as the first remedy, also assigns to them an "unquestionably serviceable" office, after the necessary depletory measures have been resorted to.

Their beneficial effects may be explained on the principle in the animal economy, that a diseased action in any part of the body may be done away by making a new and strong impression upon some remote part. A blister applied over the breast exciting inflammation, and producing determination to the external surface of

the thorax, remove the morbid action in the lungs, and assist in stopping hemorrhage.

The diet should not be stimulant, but light consisting of the farinaceæ principally; the drinks should be cool and acidulous, such as the vegetable acids, or the elixir of vitriol in sweetened water.

The habit should be preserved open for a long time, and blood taken from the arm, when there is the slightest symptom of a return of the disease. Above all the patient must avoid taking cold; nothing is so apt to produce a recurrence of the disease as a catarrh.

If the disease originated not from hereditary predisposition, or a faulty conformation of the pulmonary system, but from causes extrinsic and fortuitous, and if the blood be florid and in small quantity, and not followed by pain and difficulty of breathing, or cough, convalescence

may be expected. But the reverse of all these, presage an approaching consumption.

He who has been subjected to haemoptysis in his youth may receive in advanced life a change of constitution which shall prove a defence against this disease; but more generally, no precaution in diet, exercise, labour or enjoyments have preserved from the subsequent recurrence of this fatal malady. In the sunshine of prosperity, the moment of hilarity, or in the midst of business the most important, at home or abroad, awake or even asleep, the sluices of life are opened, and he is threatened with speedy dissolution.

In a few solitary instances, persons of this diathesis, by keeping themselves low, have protracted their lives; perpetual valetudinarians, and unequal to any effort, they have sustained a burthensome life, until sinking under infirmity, haemoptysis or some one of its consequent diseases puts an end at once to their existence and their misery. Samuel Wilson.